OPERATION AND MAINTENANCE MANUAL

AA-75CF

(NSN: 6520-01-456-7170) Part 2 of 2

P.O. Box 1548 Woodinville, WA 98072-1548
*1-800-426-5913 * 425-487-3157 * Fax: 425-487-2608*
*email: info@aseptico.com * Internet: www.aseptico.com*

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INTRODUCTION

Performance in tandem with portability makes the Aseptico AA-75CF Command Air Portable Air Compressor perfect for the demanding professional. When used with the ADU-10CF Portable Dental Field unit, the AA-75CF provides excellent performance for the needs of today's field dentistry. At 3.6 cu. ft. (19"x19"x17.3" .) and 102 lbs., the AA-75CF can be easily transported and stored. Integrated case construction minimizes set-up and tear down times as well as reduces compressor running noise below 75 dBA. A 3/4 horsepower, twin cylinder, oilless compressor with claimed operating pressures above 105 psi and flow rates on the order of 2.5 SCFM at 100 psi. is the heart of this unit, while an internal frame provides protection for the compressor motor and supports the unit's subsystems.

A customized air conditioning system composed of a one gallon air storage tank, an aftercooler, a pair of fans and a pressure switch minimizes the workload on the compressor and facilitates the delivery of cool, dry air.

The AA-75CF operates off either a 120 or 230 Volt external power source and has voltage detection circuitry which makes powering the unit as simple as selecting the proper cord for the electrical source receptacle. A power source capable of supplying 2000 Watts at 120 or 230 Volts and a 3/8 male quick connect coupling to mate with the compressor's air output fitting is all that is required to begin using the AA-75CF.

A duplex outlet provides 120 Volt power to supplemental equipment. Power outlet and system circuit breakers, a safety relief valve, and a pressure switch with an unloader valve are included to ensure the safety of the system and the user. The AA-75CF will provide reliable service in all conditions with a minimum amount of routine maintenance. Simply keep the air intake filters clean, the tank emptied, surfaces disinfected and follow the instructions provided in this manual to receive the best and longest service from your Aseptico equipment.

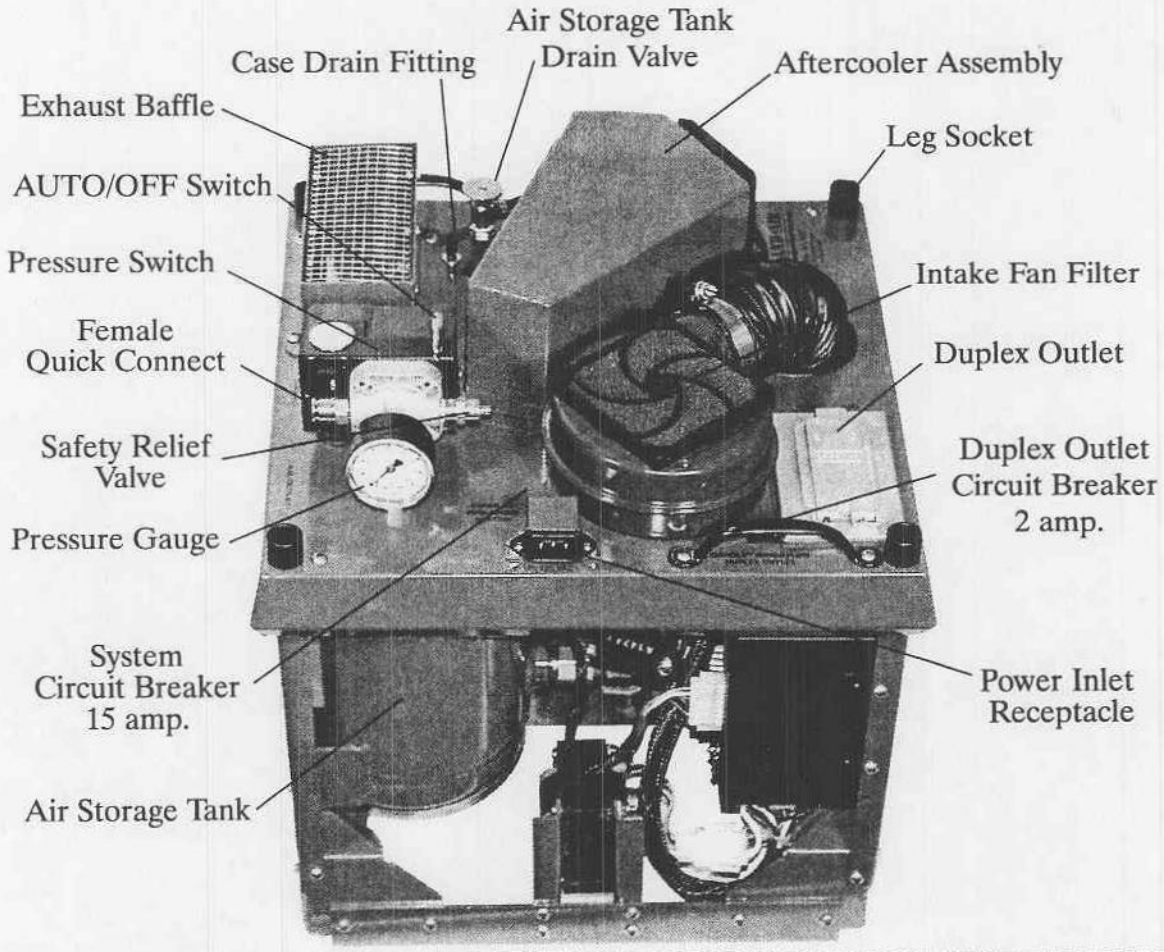


Figure 1
AA-75CF Component Identification

SAFETY PRECAUTIONS

1. This compressor needs no lubrication and should never be oiled. Applying oil to any part could result in polluted air delivery to the air handling equipment.

2. Always run the compressor with the case lid open to ensure proper cooling of the compressor head and motor.

3. All compressors generate heat even under normal operating conditions. To avoid serious burns, never touch the compressor or internal parts during or immediately after operation.

4. When unit is not in use, wrap power cords and store inside compressor. Do not abuse cord.

5. ALWAYS use a grounded 3-prong power cord and grounded power source.

6. To prevent explosive hazard, DO NOT operate compressor near combustible liquids or vapors. Personal injury and/or property damage may result.

7. Do not submerge unit in water.

8. Ambient temperature should not exceed 49°C (120°F).

9. Always disconnect the power before servicing.

OPERATION INSTRUCTIONS

Set-Up

1. Unpack the AA-75CF unit from all external packaging. With the large side of the case down, unlock all perimeter latches and remove the case top.

2. Select the power cord appropriate for the power source from the cord pouch. *Reference figure 2.*

3. Swing down the case legs, contained in the case top, and fit them into the leg sockets on the compressor top cover. The case top will serve as protection from the elements and offer minor noise reduction. *Reference figure 2.*

Figure 2
Case Top

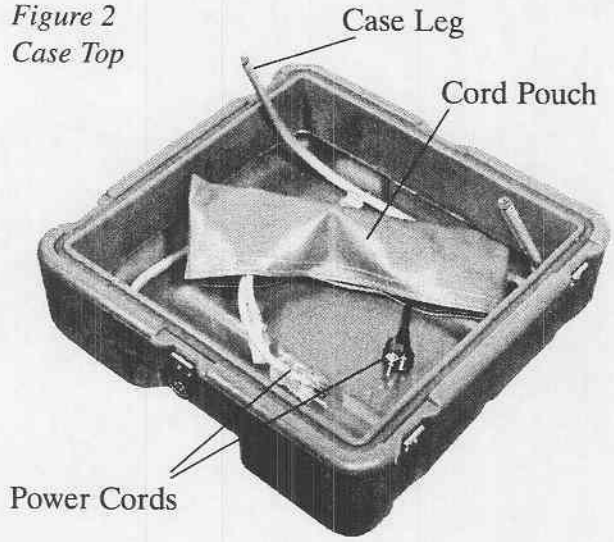
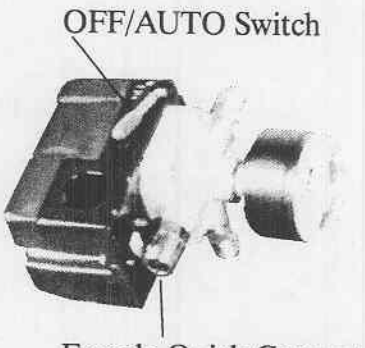


Figure 3
Pressure Switch



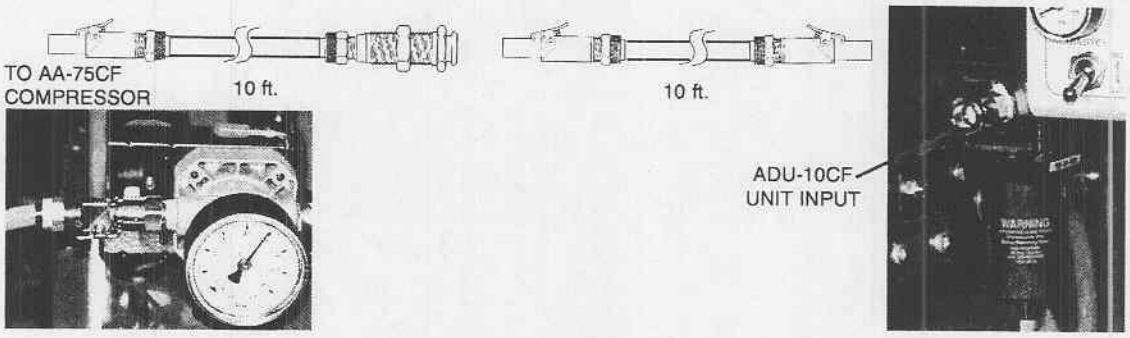


Figure 4 - Air Supply Line Connection

4. With the OFF/AUTO switch of the pressure switch in the OFF position, plug the female end of the selected power cord into the power inlet receptacle on the compressor and the other end into an appropriate power source. At this time the compressor circuitry will detect the line voltage and select appropriate operating conditions. If 230 Volt power is detected, a click will be audible as voltage selector relays switch. Voltage should not hereafter be changed during operation. *Reference figure 3.*

5. From the ADU-10CF air hose package, locate the 3/8" male-male air hose. Connect 3/8" male-male quick connect air hose to the female air output connector on compressor. Connect the female-male extension air hose, if desired. Connect to the ADU-10CF dental unit. *See figures 3 & 4.*

! WARNING ! Do not start the compressor with the male-male hose installed only to the compressor module. Connection in this manner may result in injury to user. The other end of the air hose must be connected to the delivery unit.

Compressor Operation

1. With the steps of the Set-Up section complete, toggle the pressure switch to the AUTO position. The compressor will then fill the air storage tank and cutoff, indicating full pressure.

2. As air is consumed in normal operation, the compressor will cycle when the air storage tank pressure falls below 70 psi until it reaches 105 psi.

   If the compressor is to remain idle for an extended period of time, toggle the pressure switch to the OFF position.

Daily Functional Checklist

With the AA-75CF compressor connected to a power supply, operation of the following components ensures full function performance.

_____ Compressor motor functions.

_____ Air storage tank maintains pressure.

_____ Pressure switch dictates a cut off pressure of 105psi ± 5psi and a restart pressure of 70 psi + 10psi

_____ Pressure switch unloader valve actuates relieving intake line pressure.

_____ Aftercooler and intake fans operate while the compressor runs and two minutes after compressor cut off.

_____ Duplex outlet provides auxiliary equipment power, 120V.

Pressure Switch Operation

1. The pressure switch serves as the primary power switch for the AA-75CF compressor. The switch is preset for cut off, 105 psi, and cut in, 75 psi, air storage tank pressures, and is equipped with an unloader valve which relieves the compressor cylinder pressure when the maximum tank pressure is reached. If for any reason the compressor stops before the maximum tank pressure is achieved, the cylinder pressure can be relieved manually by toggling the pressure switch to the OFF position. This process will prevent a high current compressor start.

2. The system is protected from high current damage by a 15 Amp system circuit breaker located behind the power inlet receptacle.

Should this breaker be tripped, turn pressure switch to the OFF position. Reset system circuit breaker. Restart compressor according to the Operating Instructions.

3. Attached to the pressure switch are a female quick connect fitting, a pressure relief valve, and a 0-160 psi pressure gauge.

4. The female quick connect fitting is the attachment point for an air line to the ADU-10CF Field Unit.

5. The pressure relief valve prevents over pressurizing the tank in the unlikely event of a pressure switch failure.

6. The pressure gauge offers a visual indication that the air storage tank is maintaining pressure properly.

Air Storage Tank Operation

Located between the aftercooler assembly and the exhaust baffle chassis is a valve used for draining the air storage tank. During normal use moisture from system air will condense in the tank. To prevent excessive moisture accumulation, the air storage tank should be drained daily.

1. Check that some air pressure is present in the tank.

2. Point the case side tank drain tube away from compressor and open the drain valve fitting.

3. Vent the air storage tank until most of the water is drained then close the drain valve fitting.

This procedure will both blow off water and bleed the tank of pressure for storage or transportation. When operating in wet or humid environments, water build up may increase. Shortened cycle time may indicate reduced air storage tank capacity. Drain air storage tank as necessary.

Case Drain Operation

When operating in wet weather conditions, water may collect in the case bottom from rain contact and moisture in the intake air. This water can be removed by attaching the saliva ejector body from the ADU-10CF to the case drain fitting and applying vacuum.

Duplex Outlet Operation

To accommodate supplemental equipment, the AA-75CF has a duplex outlet located on the top cover. The outlet will supply 120V power regardless of the supplied system power and is protected by a 2 amp circuit breaker located next to the outlet cover. Duplex outlet power is available when the pressure switch is in the AUTO position.

Grounding Lug

Mounting point supplied for attaching an earth ground.

Air Flow System Operation

In order to move fresh air through the AA-75CF, two cooling fans reside on top cover of the compressor top. These fans activate when the pressure switch is toggled to the AUTO position. They run while the compressor is operating and two minutes after the compressor stops.

Incoming air for both fans is filtered by foam media. After each day of use, this media should be cleaned. To clean media:

1. Remove snap on media guard from fan guard assembly.

2. Extract filter media.

3. Rinse with soapy water.

4. Squeeze dry and replace.

Intake air for the compressor is filtered through two compressor intake filters. One is located on each compressor head. The felt media of these filters requires periodic inspection and replacement. Excessive contamination can reduce compressor output and may affect service life. If a clean dry operating environment is maintained, initial inspection is recommended after 500 hours. Humid or wet conditions require more frequent inspection. To replace filters:

1. Remove lower module from case bottom as per instructions in Extreme Temperature Operation.

2. Locate air intake filters located on the top of the compressor heads.

3. Grasp filter cap and twist counterclockwise to expose felt media.

4. Remove felt media and replace with part #730382.

Extreme Temperature Operation

When the AA-75CF is to be used in an extremely hot environment for extended periods of time, the compressor may overheat. Thermal protection in the compressor will shut off the motor when this condition arises. If this shut off occurs, additional cooling is necessary. The compressor cooling can be improved, at the expense of noise reduction, by removing the compressor from the hard shell case. Operating the AA-75CF's compressor's component module outside the case provides superior air flow and heat dissipation.

To extract the compressor from hard shell case:

1. Remove case top.

2. Carefully place unit top cover down.

3. Remove the case bumper screws, sealing washers and case bumpers. Refer to Service Manual Reference figure B.

Note: this will require a 7/16 in. socket wrench.

4. Lift off case bottom.

5. Turn the compressor back to upright position.

6. Replace by reversing steps. Secure case bumpers using a thread locking compound.

Shut Down

1. If necessary, drain the case using the saliva ejector body.

2. Perform the end of the day fan filter cleaning and air storage tank draining procedures. (see Air Storage Tank Operations Procedures at the bottom of page 6)

3. Turn the pressure switch to the OFF position. Allow air storage tank to drain completely, then close tank drain valve.

4. Fold the case legs into the case top.

5. Disconnect the power cord and the air hose and return the power cord to the cord pouch.

6. Replace the case lid and secure all perimeter latches.

Preparation for Long Term Storage and Shipment

Preparation for long term storage or shipment should be performed by completing the steps of the Shut Down section of Operation Instructions. With the pressure switch in the OFF position, wipe down exposed components with a commercial dental disinfectant, drain the air storage tank, and evacuate any standing water in the case bottom. Thoroughly drying the unit will prevent a high humidity environment from developing in the sealed case. Collect the power cords in cord pouch and store the pouch in the space above the duplex outlet. Place the pouch's Velcro edge down to prevent compression of the intake hose. Fold case legs into the top, replace the lid and secure all perimeter latches. When unpacking after extended storage, complete the daily functional check list.

Troubleshooting

Symptom	Problem	Action
System non-operational	Main breaker tripped Pressure switch contacts corroded	Reset main breaker Replace switch
Compressor motor not running	Main breaker tripped Thermal overload tripped	Reset main breaker Allow several minutes to cool and restart
No duplex outlet power	Circuit breaker tripped	Reset duplex breaker
Tank pressure exceeds 110 psi.	Pressure switch settings altered	Readjust according to Pressure Switch Replacement section note
Compressor attempts to restart under load	Leaking or obstructed check valve Misaligned unloader valve	Disassembly and clean or replace. Tighten unloader valve screw and realign.
Extended compressor cycle time	Air demand has been altered Clogged intake filters. Air line leaks. Water collected in air storage tank.	Readjust instruments Clean or replace. Tighten couplings, retape. Blow off tank

Motor won't start with gauge pressure at 0 psi
The thermal protection of the compressor may have been activated. If system fans are still functioning, allow the unit to cool briefly and restart. If system fans are not running, a high amperage condition existed resulting in the system circuit breaker being tripped. This condition will result from a leaking check valve or malfunctioning unloader valve.

Motor experiences labored start with gauge pressure below 70 psi
This condition results from the motor attempting to restart with pressure in the cylinder. This is an indication of a leaking check valve or malfunctioning unloader valve. Inspect the check valve and the unloader switch. Service components as required.

Motor starts at an intermediate pressure or Pressure relief valve is activated
Disconnect the unit from the power source. Inspect the pressure switch for excessive wear and damaged or dirty components. Replace parts as required.

Compressor cycles more frequently than is common
Shut off compressor. Watch the tank pressure gauge. If the tank pressure drops rapidly, check tubing and fittings for leaks. If tubing and fittings are satisfactorily connected, the check valve should be inspected for dirt and damage. If after shut off tank pressure is maintained, the tank should be blown off. Water vapor can condense in the tank and reduce its capacity.

Compressor takes longer to build tank pressure than is common
Check system tubing and fittings for leaks. Inspect compressor air intake filters. Replace filter cartridge if required.

No power to duplex outlet
Verify system is powered. Reset duplex outlet circuit breaker.

Specifications

Standard Features:	120/230V 50/60Hz, 3/4hp compressor Aluminum Air Storage Tank Dual Pass Aftercooler Auxiliary Equipment Power Supply
Dimensions:	19 x 19 x 17.3 in.
Volume:	3.6 cu. ft.
Weight:	102 lbs.
Noise Level:	< 75dBA
Electrical Requirement:	120/230 Volt, 50/60Hertz
Compressor Motor Performance:	2.9 SCFM @ 100 psi, 60 Hz 2.4 SCFM @ 100 psi, 50 Hz
Air Storage Capacity:	1 U.S. Gallon (3.785 liter)
Auxiliary Equipment Power Outlet:	120 Volt duplex outlet
Operating Temperature:	2° C to 49° C (35° F to 120° F)

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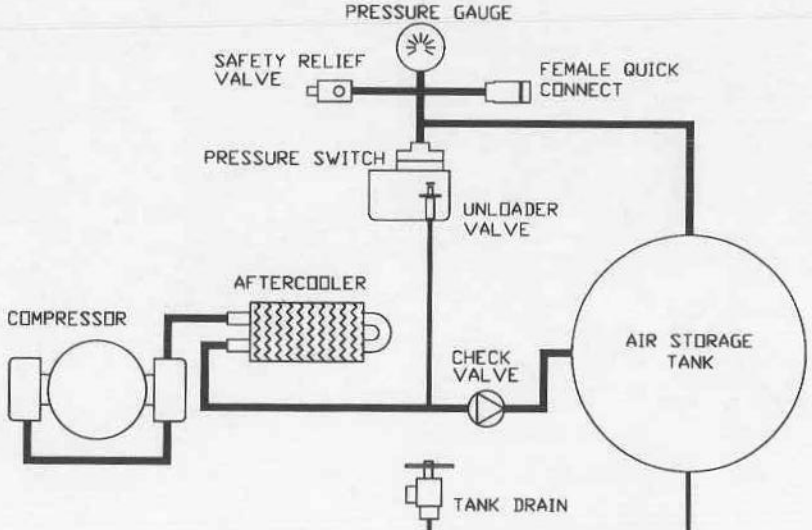
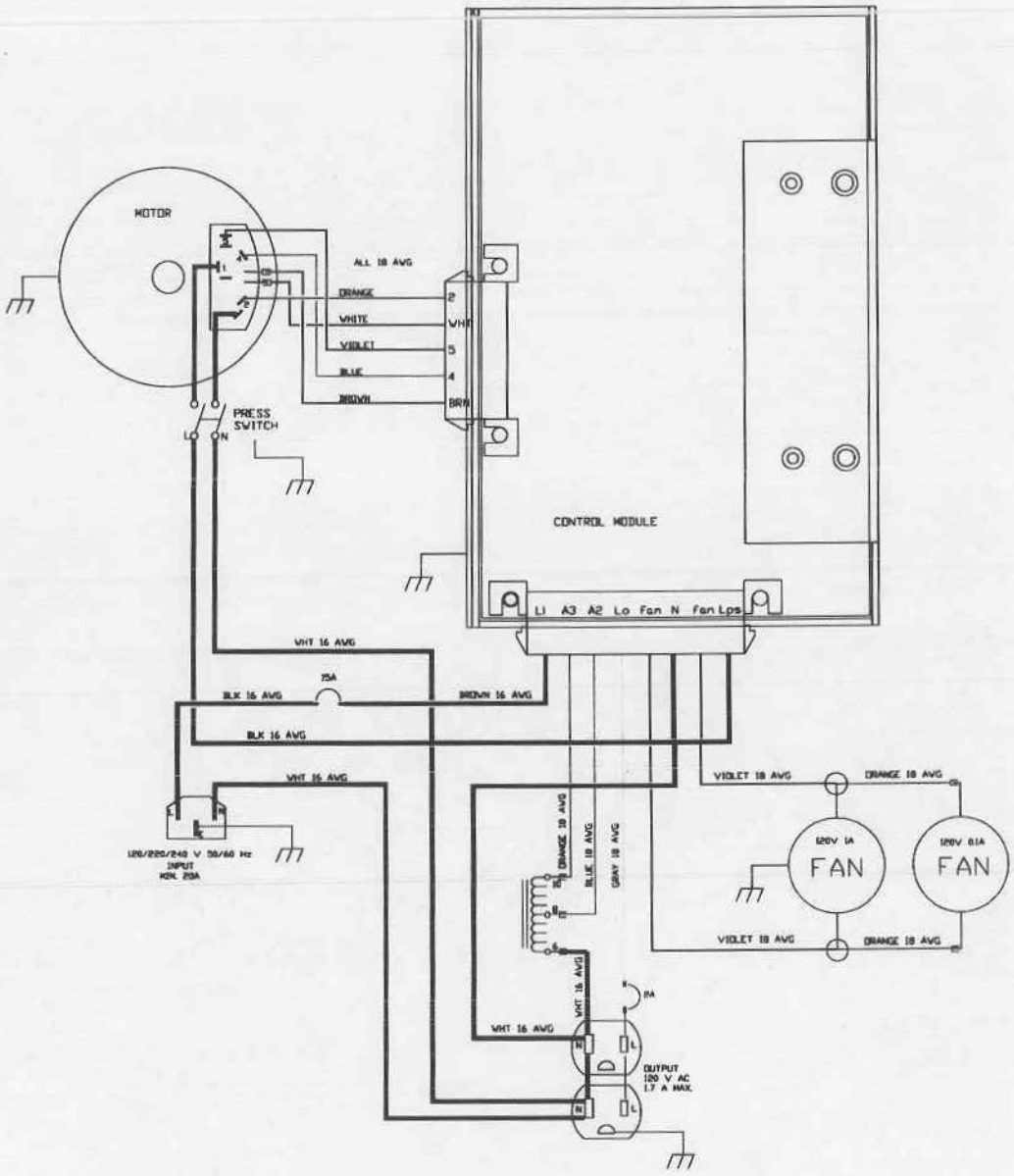
Pneumatic Schematic



Wiring Schematic



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AA-75CF COMMAND AIR COMPRESSOR

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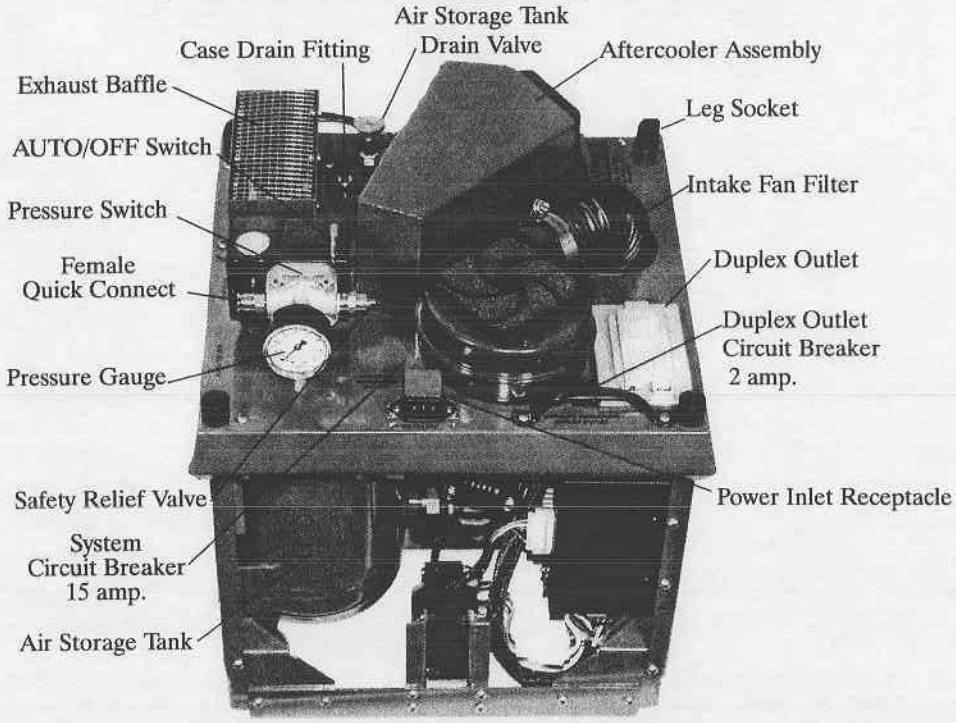

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Set-Up

1. Unpack the AA-75CF unit from all external packaging. With the large side of the case down, unlock all perimeter latches and remove the case top.
2. Select the power cord appropriate for the power source from the cord pouch.
3. Swing down the case legs, contained in the case top, and fit them into the leg sockets on the compressor top cover. The case top will serve as protection from the elements and offer minor noise reduction.
4. With the OFF/AUTO switch of the pressure switch in the OFF position, plug the female end of the selected power cord into the power inlet receptacle on the compressor and the other end into an appropriate power source. At this time the compressor circuitry will detect the line voltage and select appropriate operating conditions. If 230 Volt power is detected, a click will be audible as voltage selector relays switch. Voltage should not hereafter be changed during operation.
5. From the ADU-10CF air hose package, locate the 3/8" male-male air hose. Connect 3/8" male-male quick connect air hose to the female air output connector on compressor. Connect the female-male extension air hose, if desired. Connect to the ADU-10CF dental unit..

! **WARNING !** Do not start the compressor with the male-male hose installed only to the compressor module. Connection in this manner may result in injury to user. The other end of the air hose must be connected to the delivery unit.

6. Toggle the pressure switch to the AUTO position. The compressor will then fill the air storage tank and cutoff, indicating full pressure.
7. As air is consumed in normal operation, the compressor will cycle when the air storage tank pressure falls below 70 psi until it reaches 105 psi. If the compressor is to remain idle for an extended period of time, toggle the p.essure switch to the OFF position.

Shut Down

1. If necessary, attach saliva ejector body at the port labeled "case drain" to evacuate standing water in the case bottom.
2. Turn the pressure switch to the OFF position.
3. Open the needle valve labeled "tank drain" to blow moisture from the air storage tank. Rinse and dry filter media from aftercooler and intake fans.
4. Fold the case legs into the case top.
5. Disconnect the power cord and the air hose and return the power cord to the cord pouch.
6. Replace the case lid and secure all perimeter latches.